Title: SYSTEM AND METHOD OF IP PACKET FORWARDING ACROSS DIRECTLY CONNECTED FORWARDING ELEMENTS

Assignee: Intel Corporation

REMARKS

This responds to the Office Action mailed on April 7, 2006.

Claims 4, 5-8, 11, 12, 14-16, 19, and 22 are amended. Claims 1-30 remain pending in this application.

Claim Objections

Claims 6, 11, 12, 14, 15, 19, and 22 were objected to because of informalities. Applicant amends claims 6, 11, 12, 14, 15, 19, and 22 to correct the informalities. Accordingly, Applicant requests reconsideration and withdrawal of the objection.

§112 Rejection of the Claims

Claims 4, 5, 7, 8, and 16-18 were rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Applicant respectfully traverses. Applicant believes that claims 4, 5, 7, 8, and 16-18, as amended, particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Accordingly, Applicant requests reconsideration and withdrawal of the rejection.

§102 Rejection of the Claims

Claims 16-21 were rejected under 35 USC § 102(b) as being anticipated by Prince et al. (U.S. 5,852,606 hereinafter Prince).

Applicant respectfully traverses for at least the reasons presented below.

Claim 16 recites, among other things, "applying a switch-label to at least one packet, wherein the packet is in accordance with Open System Interconnection communication model". Applicant believes that claim 16 is not anticipated by Prince because Applicant is unable to find in Prince everything recited in claim 16. For example, Applicant is unable to find in Prince "applying a switch-label to at least one packet, wherein the packet is in accordance with Open System Interconnection communication model". Accordingly, Applicant requests reconsideration, withdrawal of the rejection, and allowance of claim 16. Dependent claims 17

and 18 depend from claim 16 and recite the things of claim 16. Thus, Applicant believes that claims 17 and 18 are not anticipated by Prince for at least the reasons presented above regarding claim 16, plus the additional things recited in claims 17 and 18. Accordingly, Applicant requests reconsideration, withdrawal of the rejection, and allowance of claims 17 and 18.

Claim 19 recites, among other things, "applying a switch-label to at least one packet, wherein the packet is in accordance with Open System Interconnection communication model". Applicant believes that claim 19 is not anticipated by Prince because Applicant is unable to find in Prince everything recited in claim 19. For example, Applicant is unable to find in Prince "applying a switch-label to at least one packet, wherein the packet is in accordance with Open System Interconnection communication model". Accordingly, Applicant requests reconsideration, withdrawal of the rejection, and allowance of claim 19. Dependent claims 20 and 21 depend from claim 19 and recite the things of claim 19. Thus, Applicant believes that claims 20 and 21 are not anticipated by Prince for at least the reasons presented above regarding claim 19, plus the additional things recited in claims 20 and 21. Accordingly, Applicant requests reconsideration, withdrawal of the rejection, and allowance of claims 20 and 21.

§103 Rejection of the Claims

Claims 1-4 and 6-7 were rejected under 35 USC § 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Prince.

Applicant respectfully traverses for at least the reasons presented below.

In this rejection, the Office Action considers page 2, lines 1-19 of Applicant's specification as AAPA.

Applicant believes that claim 1 is patentable over page 2, lines 1-19 of Applicant's specification and Prince because Applicant is unable to find in page 2, lines 1-19 of Applicant's specification and Prince everything recited in claim 1. For example, Applicant is unable to find in page 2, lines 1-19 of Applicant's specification and Prince, whether considered individually or in the proposed combination, "validating a header, the decrementing a time-to-live, the recalculating a second checksum, and the performing a route lookup are performed only once for the packet during transfer among a plurality of ports within a router", as claimed in claim 1.

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Applicant also believes that claim 1 is patentable over page 2, lines 1-19 of Applicant's specification and Prince because Applicant is unable to find in page 2, lines 1-19 of Applicant's specification and Prince, whether considered individually or in the proposed combination, a fair suggestion or motivation to combine page 2, lines 1-19 of Applicant's specification and Prince to achieve the things recited in claim 1.

Applicant's specification page 2, lines 1-19 states:

"forwards a packet, it executes a lookup in the routing table for the destination Internet protocol (IP) address.

In conventional systems, the router table lookup is based on the longest-prefix match. The longest-prefix match analyzes or evaluates the entire IP address to determine the next hop in the packet forwarding. The longest-prefix matches are time consuming, and unnecessary when the packet is forwarded within a router.

This process (often called route lookup), is time-consuming and limits the performance of the router. Other associated operations in the forwarding process include validating the header checksum, decrementing the time-to-live (TTL), and then recalculating and updating the header checksum. In the network element with multiple FE elements, packets might pass through multiple FEs, and when each FE performs route lookup and performs the other associated operations on the packet, the performance of the network element is reduced because of the resources that are required to support the multiple route lookup. Also, the network element will act like a set of routers as opposed to a single logical router since TTL would be decremented multiple times, once by each FE as the packet passes through it. It is important for such a network element with multiple FE elements to act as a single logical router to preserve the behavior of a standard router. Therefore it is important to minimize the route lookup and associated operations."

The Office Action combines on Prince in combination Applicant's specification page 2, lines 1-19 to reject claims 1-4 and 6-7. Specifically, the Office Action relies on the following portions of Prince: col. 9, line 29 to col. 10 line 21; col. 6, lines 19-27; col. 13, lines 42-57; and col. 14, lines 57-64.

Col. 9, line 29 to col. 10 line 21 states:

FIG. 3 illustrates an alternative preferred embodiment according to the present invention, wherein each module is, in itself, a local switch. Thus, for example, Ethernet switching module 304 has a local switch 341 to which a plurality of Ethernet ports 340 are coupled. Traffic entering one of Ethernet ports 340 destined for another one of Ethernet ports 340 is switched locally within Ethernet switch module 304 by local switch 341 without using any of the ATM core 370 bandwidth. This frees the ATM core for only cross-module traffic.

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An ATM segmentation and reassembly (SAR) module on each LAN switch module converts packets into ATM cell streams for transport over the ATM core fabric. For example, assume a packet entering one of token ring ports 320 on token ring module 302 is destined for a network device coupled to one of token ring ports 360 of token ring module 306. The packet is segmented into ATM cells by SAR 322 and transported over the ATM backplane bus 370 to SAR 362, wherein the cells are reassembled before being transmitted out one of token ring ports 360.

Note additionally that ATM switch modules 303 and 305 can likewise switch ATM cells received on one of ATM ports 330 and 350 locally by way of local switches 331 and 351, respectively, without using any ATM backplane bus 370 bandwidth. Moreover, SAR modules are absent from ATM switch modules 303 and 305 as the traffic received and transmitted on the ATM modules are received as and remain ATM cells.

As is well known in the art, and as described in further detail, for example, with reference to U.S. Pat. No. 5,408,469, assigned to the assignee of the present invention, LAN modules such as LAN module 201 of FIG. 2 or Ethernet switch module 304, FDDI switch module 301, and token ring module 302 of FIG. 3, generally provide for at least the following four functions in accordance with an embodiment of the present invention:

- (1) Address learning and propagation. This involves latching, i.e., storing a source address, e.g., a media access control (MAC) address, and propagating the association of MAC address and the module number and port number over which the source address may be reached;
- (2) Address look-up. This involves determining the VPI/VCI to use so that a packet is transmitted from hub 200 on the correct outgoing port of an ATM module, or as will be seen in the present invention, the routing tag and reassembly identifier to use so that a packet will be sent to the correct outgoing port of a LAN module:
- (3) Multiplexing and demultiplexing. This involves combining ATM cells sourced from multiple ports into a single cell stream on a per module basis before such cells are transmitted over the switching fabric, and distributing the ATM cells arriving at a module from over the switch fabric to the correct port on a module based on either VPI/VCI or routing tag and reassembly identifier information; and,
- (4) Segmentation/reassembly. This involves segmenting LAN packets that may be of some variable length, e.g., Ethernet packets, into relatively small and fixed length ATM cells before transmission to the ATM switch and reassembling the ATM cells into LAN packets at the receiving LAN module.

Col. 6, lines 19-27 states:

As will be seen, the present invention provides for an ATM switch having VPI/VCIs and allows for the ATM switch to select an appropriate output path for an ATM cell to be transmitted to an ATM module and ATM network coupled

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thereto, as well as the ability to transfer cells across the backplane bus of the ATM switch from a port on one module to a port on another LAN module, without a VPI/VCI, i.e., a connectionless transfer of an ATM cell between LAN modules, across the ATM switch fabric.

Col. 13, lines 42-57 states:

Routing Tag and Reassembly Identification

The switch fabric of the ATM switch, i.e., the ATM switch backplane bus, switches a cell based on routing information provided by the source LAN or ATM module to an output port on a destination LAN or ATM module of the switching hub. In the described system, the ATM switch is preconfigured to provide a fully connected topology between ports of all modules. In one embodiment, ATM cells transmitted across the ATM switch fabric between a source LAN or ATM module and a destination LAN module, e.g., Token Ring, FDDI or Ethernet, is accomplished by way of a routing tag prepended on the ATM cells. The routing tag provides both unicast and multicast group destination information such that the ATM cells are routed to the appropriate port on a given destination module without the need to establish a virtual circuit between the source module and the destination module using VPI/VCIs.

Col. 14, lines 57-64 states:

Each cell comprising the packet is prepended with a reassembly identifier (RID) 605 and a DTAG 606, prior to transmission across the backplane bus 370. The DTAG specifies the destination LAN module and port number to which the cell is to be transmitted, while the RID is used by the SAR module in the receiving LAN module to reassemble cells having the same RID in order to transfer the entire packet to the appropriate port therein.

The Office Action admitted that Applicant does not disclose as prior art that the validating action, the decrementing action, the recalculating action, and the route look-up are preformed only once (as claimed in claim 1). However, the Office Action states that it would have been obvious to one of ordinary skill in the art at the time of the invention to use the routing tag concept of Prince in the system outlined in Applicant admitted prior art (page 2, lines 1-19 of Applicant's specification) to yield a system in which the validating action, the decrementing action, the recalculating action, and the route look-up are preformed only once for the packet during transfer among a plurality of ports within a router. Applicant respectfully disagrees. Applicant is unable to find in all statements quoted above a teaching or fair suggestion that "validating a header, the decrementing a time-to-live, the recalculating a second checksum, and

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the performing a route lookup are performed only once for the packet during transfer among a plurality of ports within a router", as claimed in claim 1.

Further, Applicant believes that Prince teaches different things from those stated in page 2, lines 1-19 of Applicant's specification. For example, Prince teaches a routing tag (DTAG 606, FIG.) in which Prince subdivides the routing tag into two fields (901 and 902, FIG. 9) such that data cells in an Asynchronous Transfer Mode (ATM) network are routed to appropriate port on a given destination module without the need to establish a virtual circuit between the source module and the destination module using virtual path identifier (VPI) and a virtual circuit identifier (VCI) in the ATM network. Page 2, lines 1-19 of Applicant's specification states different things from the teaching of Prince. Since Applicant believes that Prince and page 2, lines 1-19 of Applicant's specification teach different things, Applicant believes that there is no motivation to modify the teachings of page 2, lines 1-19 of Applicant's specification and Prince to achieve the things recited in claim 1.

As presented above, Applicant is unable to find in page 2, lines 1-19 of Applicant's specification and Prince everything recited in claim. Applicant is also unable to find in page 2, lines 1-19 of Applicant's specification and Prince, whether considered individually or in the proposed combination, a fair suggestion or motivation to combine page 2, lines 1-19 of Applicant's specification and Prince to achieve the things recited in claim 1. Accordingly, Applicant requests reconsideration, withdrawal of the rejection, and allowance of claim 1. Dependent claims 2-4 depend from claim 1 and recite the things of claim 1. Applicant believes that claims 2-4 are patentable over page 2, lines 1-19 of Applicant's specification and Prince, whether considered individually or in the proposed combination, for at least the reasons presented above regarding claim 1, plus the additional things recited in claims 2-4. Accordingly, Applicant requests reconsideration, withdrawal of the rejection, and allowance of claims 2-4.

Regarding claim 6, Applicant believes that claim 6 is patentable over page 2, lines 1-19 of Applicant's specification and Prince because Applicant is unable to find in page 2, lines 1-19 of Applicant's specification and Prince everything recited in claim 6. For example, Applicant is unable to find in page 2, lines 1-19 of Applicant's specification and Prince, whether considered individually or in the proposed combination, "the validating action, the decrementing action and the recalculating action are performed only once for the packet during transfer among a plurality of ports within a router", as claimed in claim 6. Further, for the reasons at least similar to those presented above regarding claim 1, Applicant also believes that claim 6 is patentable over page 2, lines 1-19 of Applicant's specification and Prince because Applicant is unable to find in page 2, lines 1-19 of Applicant's specification and Prince, whether considered individually or in the proposed combination, a fair suggestion or motivation to combine page 2, lines 1-19 of Applicant's specification and Prince to achieve the things recited in claim 6 such as "the validating action, the decrementing action and the recalculating action are performed only once for the packet during transfer among a plurality of ports within a router". Accordingly, Applicant requests reconsideration, withdrawal of the rejection, and allowance of claim 6. Dependent claim 8 depends from claim 6 and recites the things of claim 6. Thus, Applicant believes that claim 7 is patentable over page 2, lines 1-19 of Applicant's specification and Prince, whether considered individually or in the proposed combination, for at least the reasons presented above regarding claim 6, plus the additional things recited in claim 7. Accordingly, Applicant requests reconsideration, withdrawal of the rejection, and allowance of claim 7.

Claims 5 and 8 were rejected under 35 USC § 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Prince et al. (U.S. 5,852,606) in further view of Andersson et al. (U.S. 6,449,275, hereinafter Andersson), of record.

Dependent claims 5 and 8 depend from claims 1 and 6. Applicant also believes that claims 5 and 8 are patentable over page 2, lines 1-19 of Applicant's specification, Prince, and Andersson, whether considered individually or in the proposed combination, for at least the reasons presented above regarding claims 1 and 6, plus the additional things recited in claims 5 and 8. Accordingly, Applicant requests reconsideration, withdrawal of the rejection, and allowance of claim 5 and 8.

Claims 11-12 and 14-15 were rejected under 35 USC § 103(a) as being unpatentable over Prince in view of Jennings et al. (U.S. 6,807,175, hereinafter Jennings).

The Office Action states in the heading on page 8, paragraph 24 that claims 11-12 and 14-15 are rejected under 35 USC § 103(a) as being unpatentable over Prince in view of Jennings. However, in paragraph 25 and 26, the Office Action does not mention why Jennings is used in the proposed combination of Prince and Jennings. The Office Action, paragraph 25 and 26, seems to mention only Prince.

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Nevertheless, Applicant respectfully traverses the rejection claims 11-12 and 14-15 over Prince and Jennings, whether Prince and Jennings are considered individually or in the proposed combination, for at least the reasons presented below.

Claim 11 recites, among other things, "adding a switch-label corresponding to an actual egress interface to the table, when an egress-port is not present in the forwarding element, wherein the switch-label is unique for every port/next-hop pair on the router".

Applicant believes that claim 11 is patentable over Prince because Applicant is unable to find Prince everything recited in claim 11. For example, Applicant is unable to find Prince "adding a switch-label corresponding to an actual egress interface to the table, when an egressport is not present in the forwarding element, wherein the switch-label is unique for every port/next-hop pair on the router".

Applicant also believes that claim 11 is patentable over Prince because Applicant is unable to find in Prince a fair suggestion or motivation to modify Prince to achieve the things recited in claim 11.

The Office Action admits that Price does not expressly disclose "adding a switch-label corresponding to an actual egress interface to the table, when an egress-port is not present in the forwarding element, wherein the switch-label is unique for every port/next-hop pair on the router", as recited in claim 11. However, the Office Action compares the teaching of Prince in col. 14, lines 40-45 to those recited in claim 11. Applicant respectfully disagrees with the comparison because Applicant believes that col. 14, lines 40-45 of Prince teaches different things. Even if the comparison is fair, Applicant is unable to find in col. 14, lines 40-45 of Prince the things recited in claim 11.

Col. 14, lines 40-50 of Prince states:

"In the switching hub of the present invention as illustrated in FIG. 3, traffic can be routed either LAN to LAN, LAN to ATM, ATM to LAN, or ATM to ATM. Furthermore, with respect to LAN to LAN and ATM to ATM, traffic may either be routed within a module or between modules, depending on the destination of the traffic. It is only in the case of cross module traffic transported across the ATM switch fabric that the RID and DTAG are used. When a packet is received at, for example, one of Ethernet ports 340 and transmitted out one of Ethernet ports 340, the packet does not traverse the switch fabric (backplane bus 370). Thus, RID

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605 and DTAG 606 are not prepended as the packet is not routed through the ATM switch." (emphasis added).

In the statement above, Applicant is unable to find a teaching or fair suggestion of adding a switch-label corresponding to an actual egress interface to the table, "when an egress-port is not present" in the forwarding element, wherein the switch-label is unique for every port/next-hop pair on the router, as claimed in claim 11. Further, even if the comparison between col. 14, lines 40-45 of Prince and claim 11 is fair, one skilled in the art would not be motivated to go against the teaching of Prince to achieve the things of claim 11. For example, one skilled in the art would not be motivated to modify the teaching of Prince such that RID 605 and DTAG 606 are prepended when the packet is not routed through the ATM switch.

Based on the reasons presented above, Applicant believes that claim 11 is patentable over Prince. Accordingly, Applicant requests reconsideration, withdrawal of the rejection, and allowance of claim 11.

Claim 12 recites, among other things, "performing no altering of the routing table for a forwarding element, when an egress-port is present in the forwarding element".

Applicant believes that claim 12 is patentable over Prince because Applicant is unable to find Prince everything recited in claim 12. For example, Applicant is unable to find Prince "performing no altering of the routing table for a forwarding element, when an egress-port is present in the forwarding element". Further, based on at least the reasons presented above regarding claim 11, Applicant also believes that claim 12 is patentable over Prince because Applicant is unable to find in Prince a fair suggestion or motivation to modify Prince to achieve the things recited in claim 12 such as "performing no altering of the routing table for a forwarding element, when an egress-port is present in the forwarding element". Accordingly, Applicant requests reconsideration, withdrawal of the rejection, and allowance of claim 12.

Claims 14 recites the things at least similar to those of claim 11. Therefore, Applicant also believes that claim 14 is patentable over Prince for at least the reasons presented above regarding claim 11. Accordingly, Applicant requests reconsideration, withdrawal of the rejection, and allowance of claim 14.

Claims 15 recites the things at least similar to those of claim 12. Therefore, Applicant also believes that claim 15 is patentable over Prince for at least the reasons presented above

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regarding claim 12. Accordingly, Applicant requests reconsideration, withdrawal of the rejection, and allowance of claim 15.

Claims 22-30 were rejected under 35 USC § 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Andersson et al. (U.S. 6,449,275, hereinafter Andersson), of record.

Applicant respectfully traverses for at least the reasons presented below.

In this rejection, the Office Action considers page 1 line 17 to page 2 line 25 of Applicant's specification as AAPA.

Applicant believes that claim 22 is patentable over page 1 line 17 to page 2 line 25 of Applicant's specification and Andersson because Applicant is unable to find in page 1 line 17 to page 2 line 25 of Applicant's specification and Andersson everything recited in claim 22. For example, Applicant is unable to find in page 1 line 17 to page 2 line 25 of Applicant's specification and Andersson, whether considered individually or in the proposed combination, "a rout lookup table to contain addresses associated with the packets entering the forwarding elements, and a switch-label entry table in each of the forwarding elements to contain labels associated with the packets transferred internally among the forwarding elements via the switched interconnect/backplane", as claimed in claim 22.

Applicant also believes that claim 22 is patentable over page 1 line 17 to page 2 line 25 of Applicant's specification and Andersson because Applicant is unable to find in page 1 line 17 to page 2 line 25 of Applicant's specification and Andersson, whether considered individually or in the proposed combination, a fair suggestion or motivation to combine page 1 line 17 to page 2 line 25 of Applicant's specification and Andersson to achieve the things recited in claim 22.

Applicant's specification page 1 line 17 to page 2 line 25 states:

"In recent years, a new trend has emerged in the networking industry. Devices such as routers and switches have begun to evolve from monolithic, highly customized and integrated designs into aggregations of discrete, modularized components. Intel® Open Networking is an architecture with open interfaces for flexible deployment of new network services and technology. This architecture demonstrates modular design by separating control and management functions through a control element (CE) of a network device from forwarding elements (FEs) that perform data forwarding functions. This type of architecture takes advantage of the best-of-the-breed network forwarding hardware while not requiring changes in the control software. In Open Networking architecture, a

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network device consists of a set of FEs controlled by single or multiple CE(s). The FEs can be interconnected in some arbitrary topology. While the architecture of Open Networking provides many advantages over monolithic designs, it also introduces new challenges in preserving the behavior of a standard networking device. One such challenge is the routing of packets through the set of forwarding elements in a network element with multiple FE elements. For example, when a single-box router forwards a packet, it executes a lookup in the routing table for the destination Internet protocol (IP) address.

In conventional systems, the router table lookup is based on the longest-prefix match. The longest-prefix match analyzes or evaluates the entire IP address to determine the next hop in the packet forwarding. The longest-prefix matches are time consuming, and unnecessary when the packet is forwarded within a router.

This process (often called route lookup), is time-consuming and limits the performance of the router. Other associated operations in the forwarding process include validating the header checksum, decrementing the time-to-live (TTL), and then recalculating and updating the header checksum. In the network element with multiple FE elements, packets might pass through multiple FEs, and when each FE performs route lookup and performs the other associated operations on the packet, the performance of the network element is reduced because of the resources that are required to support the multiple route lookup. Also, the network element will act like a set of routers as opposed to a single logical router since TTL would be decremented multiple times, once by each FE as the packet passes through it. It is important for such a network element with multiple FE elements to act as a single logical router to preserve the behavior of a standard router. Therefore it is important to minimize the route lookup and associated operations.

One conventional model for high-speed routers consists of a number of FEs interconnected by a high-speed switching fabric. These existing routers with multiple FEs use proprietary switching protocol between the FEs to forward packets between them. This current model has proved to be highly efficient, but proprietary interfaces to their hardware prevent innovation by networking independent software vendors (ISVs) and independent hardware vendors (IHVs)."

The Office Action combines on Andersson in combination Applicant's specification page 1 line 17 to page 2 line 25 to reject claims 1-4 and 6-7. Specifically, the Office Action relies on the following portion of Andersson: col. 3, lines 17-38.

Col. 3, lines 17-38 states:

"The connection setup manager responds by providing transfer lists for the connection to two tagging units BP/TUs. The two tagging units BP/TUs which receive transfer lists are on device boards connected to the two external links involved in the connection. The transfer list is a list of destination addresses to be used for switching and routing of the traffic cell through the multi-stage ATM

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node. The transfer list received by one of the two tagging units BP/TUs is used for routing cells in one direction through the multi-stage ATM node; the transfer list received by the other of the two tagging units BP/TUs is used for routing cells in a reverse direction through the multi-stage ATM node. The transfer lists are written into conversion tables of the two tagging units BP/TUs. After connection setup, when an ATM cell participating in the connection is received from an external link, a tagging unit BP/TU obtains the VPI/VCI and link identifier from the header of the incoming ATM cell. Using these parameters, the tagging unit BP/TU consults its conversion table to obtain the transfer list for the cell. Two other parameters, specifically cell size and QoS indicator, are also added to form the internal routing tag or "SPAS tag".

Applicant is unable to find in all statements quoted above a teaching or fair suggestion of "a rout lookup table to contain addresses associated with the packets entering the forwarding elements, and a switch-label entry table in each of the forwarding elements to contain labels associated with the packets transferred internally among the forwarding elements via the switched interconnect/backplane", as claimed in claim 22.

Further, Applicant believes that Andersson and Applicant's specification page 1 line 17 to page 2 line 25 teach different things. Therefore, Applicant believes that there is no motivation to modify the teachings Andersson and Applicant's specification page 1 line 17 to page 2 line 25 to achieve the things recited in claim 22.

As presented above, Applicant is unable to find in page 1 line 17 to page 2 line 25 of Applicant's specification and Andersson everything recited in claim 22. Applicant is also unable to find in page 1 line 17 to page 2 line 25 of Applicant's specification and Andersson, whether considered individually or in the proposed combination, a fair suggestion or motivation to combine page 1 line 17 to page 2 line 25 of Applicant's specification and Andersson to achieve the things recited in claim 22. Accordingly, Applicant requests reconsideration, withdrawal of the rejection, and allowance of claim 22. Dependent claims 23 and 24 depend from claim 22 and recite the things of claim 22. Thus, Applicant believes that claims 23 and 24 are patentable over page 2, lines 1-19 of Applicant's specification and Prince, whether considered individually or in the proposed combination, for at least the reasons presented above regarding claim 22, plus the additional things recited in claims 23 and 24. Accordingly, Applicant requests reconsideration, withdrawal of the rejection, and allowance of claims 23 and 24.

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Claim 25 recites, among other things, "a switch-label entry table to contain labels associated with packets transferred among the forwarding elements" and "a switch-label table manager that generates the switch-label table for each of the forwarding elements".

Applicant believes that claim 22 is patentable over page 1 line 17 to page 2 line 25 of Applicant's specification and Andersson because Applicant is unable to find in page 1 line 17 to page 2 line 25 of Applicant's specification and Andersson everything recited in claim 22. For example, Applicant is unable to find in page 1 line 17 to page 2 line 25 of Applicant's specification and Andersson, whether considered individually or in the proposed combination, "a switch-label entry table to contain labels associated with packets transferred among the forwarding elements" and "a switch-label table manager that generates the switch-label table for each of the forwarding elements". Further, based on at least the reasons presented above regarding claim 22, Applicant also believes that claim 25 is patentable over page 1 line 17 to page 2 line 25 of Applicant's specification and Andersson, whether considered individually or in the proposed combination, because Applicant is unable to find in page 1 line 17 to page 2 line 25 of Applicant's specification and Andersson, whether considered individually or in the proposed combination, a fair suggestion or motivation to modify the teachings of page 1 line 17 to page 2 line 25 of Applicant's specification and Andersson to achieve the things recited in claim 25 such as "a switch-label entry table to contain labels associated with packets transferred among the forwarding elements" and "a switch-label table manager that generates the switch-label table for each of the forwarding elements". Accordingly, Applicant requests reconsideration, withdrawal of the rejection, and allowance of claim 25. Dependent claims 26-30 depend from claim 25 and recite the things of claim 25. Thus, Applicant believes that claims 26-30 are patentable over page 2, lines 1-19 of Applicant's specification and Prince, whether considered individually or in the proposed combination, for at least the reasons presented above regarding claim 25, plus the additional things recited in claims 26-30. Accordingly, Applicant requests reconsideration, withdrawal of the rejection, and allowance of claims 26-30.

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Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney ((612) 373-6969) to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this _____ day of <u>July, 2006</u>. will

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Name